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Vocabulary Enlargement in the Middle Grades

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STRESS on vocabulary enlargement and emphasis on linguistic training are not new phases of the elementary language course. What is new is that we now know more about the existing relationship between vocabulary and intelligence. We have found the necessity of stressing the child's linguistic development. From this necessity we have striven to discover new ways of teaching vocabulary. We have discovered that merely using a word, merely pronouncing a word, may not signify the existence of any bond between the word used and the idea ordinarily represented by the word. Whenever such an aphasic condition exists we look for abnormality of mind rather than for normality.

Words can not be taught in a vacuum. They must be taught in contact with the reality which they symbolize. The child must come to respect the words he uses. He must be made word-conscious. The high school teacher is handicapped if nothing has been done in the grades to give the child a respect for the language he uses.

Dr. Michael West of Dacca University, India, says that language in education is not the same thing as arithmetic in education, or history in education. Defective

teaching of these latter subjects may leave a gap in the child's education, but defective language-teaching "causes a disease at the root of the mind itself. It disorganizes the whole psychic system, of an individual, and of a nation." Elsewhere Dr. West writes of language as follows: "It is the stuff of which our selves are made; it is the most important of all formative influences in moulding not only the intellect, but the character also." It is his belief that defective language-teaching may influence the character of a whole nation.

Recent interest in vocabulary size and its relation to intelligence, and to success in the business and commercial world, has detracted considerably from the earlier stress on minimum essentials in English, in which we strove to find out how little English a person needed. English, particularly vocabulary, is very much like money: the more we have the more we can do with it.

Language teaching in all the grades is of supreme importance, and of the whole field of language training, vocabulary enlargement is most necessary. In the middle grades the teacher should make a conscious effort to help the pupils transfer their reading vocabulary to their spoken

and written; she should help them make their passive vocabulary into an active one. In doing this, obviously, there must be practice. She must give the pupils not only a chance to use their newly acquired words, but also she must encourage them in wanting to use them. In the primary grades particularly, but also in the intermediate grades, she must see that the pupils develop that bond between the symbol and the idea symbolized.

Here follow some procedures that I have used in the intermediate grades, and some I have seen used successfully.

Take a noun with which the children are familiar; say, *boy* or *girl*. Write the word in the center of a section of the blackboard. Then ask the children to think of all the words they can which will tell something about the word on the board. You may utilize some pictorial scheme if you wish; such as drawing lines out in all directions from the word and writing the descriptive words on these lines. When the lines are filled, you may join the ends of the protruding lines and have a circle, or a wheel with spokes.

You may make another wheel by using the opposites, or antonyms, of the words in the first wheel. I have found this an excellent way to teach the opposites. With the upper grades, one can stress the significance of prefixes and show how the negatives of words are formed by the use of *un* or *in* or *non*. As the work progresses, the teacher can make a wheel by using all opposites which are made from different stems from those in the positive wheel. That is, if the word *bad* is used in the first wheel, then *good* would be used in the second. Or, the second wheel may be composed of negatives formed by using prefixes which mean *not*.

Many variations of this same idea may be used. I have taken one of the descriptive words and asked the class how many nouns, or objects, they could think of with which the descriptive word could be

used. Take the word *ugly*. It can be used with persons, acts, books, dresses, etc.

Some one has said wisely—especially so for the teacher,—that the first danger in the use of words is of not saying what you mean. The little word-vessels that I use may not have the same cargo of meaning that those you use may have. One's experiences have much to do with the meanings he puts into and gets out of words. A farm does not mean the same thing to a boy in Nebraska that it does to a boy in Vermont. Teachers find it necessary to select their stories according to the experiences of their children. Race, geography, as well as many other conditions shape the images and experiences of children.

We hear much about reading as a means of developing the vocabulary, and of course it does increase the familiarity with words; on the other hand, the child with a limited vocabulary is not going to get much from his reading. Words have to be taught as such. They are tools and children should be given a chance to become familiar with them, just as they are given a chance to become familiar with tools in shop work. The teacher who is, herself, word-conscious should have no trouble in transferring that consciousness to her pupils. . .

I know of a teacher who starts out with some such sentences as,

"The tired man walked home slowly."
"With bent head and dragging footsteps, the tired workman plodded wearily homeward."
"The bright moon shone on the snow."
"The sparkling, white snow glistened beautifully in the bright moonlight."

After pointing out the differences in the sentences, the teacher then develops with the class the use of picture words. The class comes to see the need of many words when they try to share the experiences with others, either in written or spoken work.

Still another way is to divide words

into two groups according to their meaning. That is, suppose you ask your class to think of all the words they can which tell how a person moves. One kind of word will tell that the person moves swiftly. The other kind will tell that the person moved slowly, and so on.

Take the general idea "weather." Then ask the pupils to think of words which will describe the weather on a hot day, in the summer, in the winter, during a rain storm.

Poe tries to indicate poetically the different sounds made by various kinds of bells. Why not have the children try to do this?

Such exercises have their parallel in dramatization of characters and scenes in plays and books. We ask the child to tell us how he thinks a certain character looks, or how he acts. We can use this same idea in the enlargement of the bonds between ideas and symbols, which we call words.

Children should be taught early to respect words. It is difficult to realize when old that words have a soul if one has not grown up believing that they have. Each word has its own individuality and this should be respected. Words are like persons in that some of them get into bad company and lose their social and moral prestige. Others rise from lowly origins and acquire distinction. Thackeray must have liked *genteel*, for he uses the word repeatedly, but any examination of a recent dictionary will show that the word is no longer used except ironically.

I have found that children enjoy playing with words. They like to know how words come into use. "By hook and crook" is an expression with an interesting history. So is the expression "hurly-burly." From mythology come such words as *vulcanize*, and *panic*; from history we get *boycott*; from industry we get *macadamize*; from modern advertising we get *Socony*, *Nabisco*, *Victrola*. *Genteel* has lost its prestige in our own day. *Pitiable* has

almost parted company with its relatives *pitiful* and *piteous*. *Chiseler* is now popular and historical. Tying up daily life, other fields than English, even their own creation—all these aid in vocabulary enlargement, and in the development of word-consciousness.

Look at the number of words associated with the general idea of redness. The assignment requiring a listing of all the words that mean redness is worth while, even if it does nothing more than to teach the children to spell *vermilion* with one *l*.

In the study of words, the teacher has a chance to broaden the horizon of her pupils in many ways. She can teach obliquely many things that the children will find useful in their reading, in their history, and geography.

A specific assignment requiring the use of new words is somewhat questionable. What you will get is a special effort to use the word or words, and the environment will be unnatural. The better plan is to encourage the use of new words. Mary has handed in some written work and she has used some word about which the class has talked. Comment about what Mary has done. Say simply, "I like to find these new words in your writing." Or, "I like to see your efforts to enlarge your vocabularies." One time a student wrote for me, "She walked down the street showing her *gaucherie*." The girl had not sensed the real meaning of the word and had simply substituted "gaucherie" for "awkwardness." She had not felt the difference. *Procrastinate* may mean "to put off," but no one would tell the street car conductor to procrastinate him at the next corner.

This inner, sometimes dual, meaning of words is sometimes difficult for children to get. Even grownups do not always get it. But children who have been started in the grades to respect words, to acquire this feeling for them, will grow up making fewer blunders than those who have never had their attention directed to them.

Vocabulary Acquisition of Spanish-Speaking Children

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IN ENGLISH-speaking communities the acquisition of an oral vocabulary is so gradual and unavoidable that the phenomenon is accepted as a matter of course. Primary teachers do recognize that children from certain homes have wider vocabularies than children from other homes, but in general all the children have a sufficient command of the spoken language so that the regular reading program can proceed with slight attention to the extent of the oral vocabulary.

In non-English speaking communities the vocabulary becomes of first importance. Reading cannot be introduced at once but must wait until the proper oral background is formed. The *Twenty-fourth Yearbook*¹ lists as a prerequisite to reading, "A relatively wide speaking vocabulary which enables them to recognize quickly the meaning of words and groups of words." Delimitation as to the extent of a "relatively wide speaking vocabulary" is absent. This vagueness has resulted in much confusion of practice among teachers of non-English speaking pupils. In some schools the children receive a book and reading begins at once. In other systems a full year is spent acquiring an oral English vocabulary before reading is introduced. "The aim of the first year's work in English with French-speaking pupils should be to give them command of a vocabulary of 300 or 400 words to express their ideas arising from

common and familiar experience."²

Mrs. Hughes has compiled a basal vocabulary of 660 words which should be taught in the pre-first program.³ A list of 550 words is included in the New Mexico Course of Study for the pre-first grade work.⁴ No reports seem to have been made of the extent to which these aims have been realized.

A program was inaugurated in 1931 at the San Jose Experimental school to ascertain the number of words that could be acquired in a school year by children of Spanish origin, speaking little or no English at the time of entrance to the school. The community in which this experiment is conducted is principally Spanish speaking. While many parents understand and speak English, they prefer Spanish. The priest addresses his parish in Spanish, the mission minister preaches in Spanish, the store keeper conducts his business in Spanish. It is true that the billboards are in English, and the influence of the adjacent city is largely English, but in the home, the mother tongue is Spanish. The practical effect on the school program is that the children of the age tested have little occasion to use their English outside the classroom. A list of 500 words was prepared from (a) Thorndike word list, (b) Gates word list, (c) Kindergarten Union list, (d) a study of words common

² *The Teaching of English to French-Speaking Pupils*. Ontario Teachers' Manual, Published by the Ontario Publishing Co. Ltd., 1931, Toronto.

³ *Teaching a Standard English Vocabulary*. Marie M. Hughes. Issued by the State Department of Education, Santa Fe, New Mexico.

⁴ *New Mexico Course of Study for Elementary Schools*. Issued by the State Department of Education, Santa Fe, New Mexico, 1930.

¹ *Twenty-fourth Yearbook for the National Society for the Study of Education*, Part I.

to the first readers in use at the experimental school, (e) a few local words. The two guiding criteria in the selection of words were the social utility in the spoken language and appearances of the words in the books we happen to use.

ciation, usage, and comprehension. If he failed, the teacher passed on immediately to the next item. She returned later to the word that was missed, and tested for comprehension by asking "Find the house," or "Point to the boy who runs."

TABLE I
PERFORMANCE ON SAMPLING

Year	Cases	Md. Chron. Age	Words Tested	Median Compre- hension	Median Usage
May, '32	34	6-1	50	45.5	32.5
May, '33	27	6-2	50	48.5	46.9
May, '33	24	6-6	51	50.3	45.0
May, '34	28	6-6	50	48.7	43.6

These words were divided into convenient teaching units and presented to the children. A pre-test was attempted in September but so few English words were known that the attempt was abandoned.

This method of testing is open to certain criticisms which we hope to overcome this year, but has been followed uniformly for the three years for which the data are given. The results are indicated in Table I.

TABLE II
ESTIMATED PERFORMANCE ON TOTAL WORD LIST

Year	Cases	Md. Chron. Age	Words Sampled	Median Compre- hension	Median Usage
May, '32	34	6-1	500	455	325
May, '33	27	6-2	500	485	469
May, '33	24	6-6	500	493	441
May, '34	28	6-6	500	487	436
May, '34	29	6-6	650	633	567

The judgment of the teachers was that not over five to ten English words were known by any of the children.

At the close of the year the children were tested individually on a fifty word sampling of the five hundred word list. To insure uniformity in testing, a booklet was prepared containing directions to be followed verbatim with the picture to be used. To test usage the teacher pointed to a picture and asked, "What is this?" If the child answered correctly, he was credited with a correct score on pronun-

Assuming that the performance on the sampling is true of the whole word list, we secure Table II.

The data appearing below the line in Table II may be explained as follows. In the fall of 1933 it was felt that more than 500 words could be taught. Consequently the list was expanded to 650. However, the original sampling was retained in order to obtain comparable figures for three years. If the figures for 1934 on the 50 word sampling of the 500 words can be used as an indication of what

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The Content of Elementary Language Textbooks*

Objectives, Grade Placement, and Drill Frequency

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IN THE earlier part of a report on the factual findings of an analysis of elementary language textbooks, special treatment was accorded the matter of content materials. The present part of this report will deal with the remaining problem of objectives and will add further data regarding grade placement and drill frequency.

The specific question, then, to be answered here is, to what extent are authors of elementary textbooks in language agreed in regard to (a) the objectives of language study, (b) grade placement of materials, and (c) the frequency of drill upon specific items of language and grammar?

Since the issuance of the 1917 report¹ sponsored by the National Education Association concerning the objectives of language teaching at the secondary and junior high school level, many writers have indicated a general agreement between these objectives and those of elementary teaching. Klapper² stated his aims thus: (a) to stimulate thought, (b) to teach the laws of expression and standards of language, and (c) to inculcate habits of employment of the laws and principles that have been learned.

Stormzand and O'Shea selected ten

thousand sentences for their study.³ Their material was representative of all grades of current usage. They analyzed and parsed each sentence. Such sources were chosen as Macaulay and Stevenson, newspaper articles, college papers, school compositions, letters, magazines, and finished works of fiction. The purpose was to determine the present-day need of language courses. Just how the investigators could justify the selection and parsing of these sentences on the basis of need does not appear to be established. Frequencies in usage with respect to the following topics were tabulated: (1) sentence structure, (2) clauses, (3) uses of nouns, (4) phrases, (5) parts of speech, (6) uses of pronouns, (7) verbs, (8) adjectives, (9) adverbs, and (10) all other parts of speech. The authors make the statement that the above topics constitute the main divisions of material for a course in grammar; but why these particular topics should constitute the course they do not show. It appears doubtful that their claim can hold good if we are to consider the problem in the light of present-day needs.

Johnson⁴ prepared a composite list of the major types of English expression by obtaining the opinions of 104 women freshmen in college English classes. This study, described by Johnson as "introspectional and observational," asked the

* This is the second of two articles on elementary language textbooks, the first of which appeared in the March REVIEW.

¹ *Reorganization of English in Secondary Schools*, Department of Interior Bulletin, No. 2, 1917, p. 30.

² Klapper, Paul. *Teaching English in Elementary and Junior High Schools*. D. Appleton and Company, N.Y., 1925, pp. 6 ff.

³ Stormzand, Martin J., and O'Shea, M. V. *How Much English Grammar?* Warwick and York, Inc., Baltimore, 1924.

⁴ Johnson, Roy Ivan. *English Expression*. Public School Publishing Company. Bloomington, Illinois, 1926, pp. 29 ff.

women to list the activities which they, in their own experience, had found to require the practice of the art of written or oral composition. A tabulation then attempted to place the women's answers in nine major fields, as follows: (1) letters, (2) conversation, (3) group discussion, (4) formal discussion, (5) reports, (6) personal memoranda, (7) special talks, (8) directions, instructions, and explanations, (9) story-telling.

A study was made by W. S. Guiler⁵ in an attempt to answer these questions: What mechanical abilities in written English are needed by children in their free self-expression life? and What are the appropriate school grades in which the development of these abilities should be sought?

A statistical analysis of 1731 letters was made, representing the grades from the second to the ninth, inclusive. The study sought the needs of the children in three types of usage: (1) capitalization, (2) punctuation, and (3) the use of the verb. According to the author, the "practical outcome" of the study was three-fold, showing (1) that the definite abilities that should serve as objectives of training are (a) capitalization, (b) punctuation, (c) verb usage, and (d) pronoun usage; (2) that education should make more common the use of standard diagnostic tests; and (3) that much remedial teaching of the self-teaching exercise plan should be used. The study stressed children's *needs* rather than their *weaknesses*.

Lyman⁶ made an analysis of 59,516 words from 322 freshman themes. The papers from four high schools were used. The study was made to determine the relation between fluency, mechanical accuracy, and compositional excellence as objectives in the teaching of English. The

errors were classified on the R. I. Johnson scale. The results showed a close relation between fluency and accuracy.

Findings with Relation to Objectives

These studies have gone far in determining the actual needs of pupils. The chief purpose of this article is to present the findings of a study that has been made in an effort to discover whether, with these needs in view, authors of language textbooks show any marked agreement regarding objectives, grade placement, and frequency of drill.

To find the extent to which present-day textbooks agreed in the matter of objectives, fifty-three books were examined. All of these books were submitted for examination and comparison, a request having been sent to thirty-three leading publishers. Among the fifty-three elementary textbooks, only fourteen made any attempt whatever to set up the objectives of language teaching. To tabulate these objectives, it was found necessary to adopt general headings for all that fell within obviously inclusive fields of meaning. Every objective given by each author was carefully studied and finally included under one or another of the nine different general headings.

After making a condensation of the aims listed by the Committee on the Reorganization of English, it was found that there were six distinct objectives for oral language study and five for written speech. On the other hand, the fourteen textbooks had listed but nine general objectives. In the first place, it was found that by no possible construction of the objectives in these textbooks, could there be discovered even a single aim that was mentioned or implied by all. There was only one aim, that of grammatical correctness, accepted by as many as twelve of the books; and the aim of developing coherence and effectiveness was accepted by ten.

⁵ Guiler, W. S. "Analysis of Children's Writings as a Basis for Instruction in English." *Journal of Educational Method*, V, pp. 239 ff. February, 1926.

⁶ Lyman, R. L. "Fluency, Accuracy, and General Excellence in English Composition." *School Review*, XXVI, pp. 85-100. February, 1918.

Tables were set up for the purpose of comparing the author's aims with those accepted by the National Committee. In every case, a broad interpretation was allowed for each objective. One might, therefore, expect that most of the eleven aims and objectives would be listed by each of the fourteen textbooks analyzed. However, it was found that only one of the Committee's objectives was accepted by as many as four textbooks. Three of the objectives were named or implied by three books each, five were mentioned by one book each, and the other two were ignored by all of the books.

It seems fair, therefore, to state with a certain degree of finality that the writers of current textbooks in language for the elementary grades have reached no fundamental agreement in the matter of establishing objectives for the pupil's study in this subject.

Findings with Relation to Drill and Placement

A comparison of 33,213 items of technical grammar and of language usage was made in order to determine the relative amounts of drill given each item by each textbook and to discover the grade placement usually given to it. A total of 641 items, each of which was taught in each grade, was found to have the following total distributions:

- 5,556 frequencies in grade five.
- 5,840 frequencies in grade six.
- 8,956 frequencies in grade seven.
- 12,861 frequencies in grade eight.

The frequency of drill within a particular grade frequently varied for one item as widely as from 0 to 25. That is, an item might be listed in twenty-five different lessons by one book, although another book in the same grade did not mention it at all. In one case, the range was from 0 to 84 lessons. This was for spelling study

in grade six. In the same grade, other ranges of frequency were:

The apostrophe, with a range of 0 to 18.

The comma, with a range of 2 to 25.

The period, with a range of 2 to 22.

The question mark, with a range of 0 to 26.

Adjectives, with a range of 0 to 15.

There were very few items whose frequency ranges did not touch zero at their lower limits in every grade. At the same time, an occasional item was found to have been entirely omitted by, say, one, two, or three authors in spite of the fact that all other authors emphasized it by making it the subject of study in several separate lessons.

It might be of interest to mention a few items that were entirely omitted from all books in one or more grades, when such items were included by most of the texts in all other grades. For example, there seems to be neither rhyme nor reason for the fact that no seventh-grade book made any mention of the hyphen, although most of the books in the other grades gave space to it. Voice in verbs was studied by one fifth grade book, omitted by all sixth-grade books, then included again by three seventh-grade books and all of the eighth-grade books. Diagramming was ignored by all fifth-grade books, taught in the main context of one sixth-grade book, again ignored completely in grade seven, and then included in four books for grade eight.

General Summary of All Findings

It seems conservative to state that, with a total of 673 items tabulated for grades five to eight inclusive, and with a total of only 57 items which the authors of the texts agreed should be included in a particular grade, there is very little agreement among these particular textbooks as to what should be taught to pupils of a given

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Basal Problems in Grade-School English Instruction*

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THERE ARE various barriers which hinder the elementary school child from doing his best in the development of fertile thinking, a rich and varied vocabulary, and increased power in speech, reading, and writing. No one denies that in some cases the cause lies in inheritance, but sometimes the school is blind to its sins of omission and commission in accepting, on insufficient data, the conclusion that a large proportion of its pupils are subnormal and cannot, therefore, be expected to develop power in the use of English. It takes intelligence to use the English language effectively, but no one is justified in the belief, without proof, that the converse of that proposition is true, that he who does not have a reasonable command of English is lacking in intelligence (in the sense of native capacity). Such a law of mental life, in its implications of the uselessness of environment, would sweep all public schools off the board. The school must examine the environment which it produces in order to discover those barriers which may be removed.

No school really educates a child, for education consists of changes that take place within an individual; that is, a child educates himself. The part that the school plays is to develop such an atmosphere that the child is led to desire to learn, and to point the way until he catches the tricks of learning. A horse may be led to water,

but he cannot be made to drink against his will. Far more than animals, the human being possesses the power to resist training. This touches upon the colossal problem of attitudes, motives, feelings, interests, tastes, habits of work, and other personal matters, as well as the problem of teacher-pupil relationships. These lie close to the secret of success and failure in the learning and the instruction in the field of English. Teaching is the game of influencing thought and emotions.

The criterion for judging results of a unit of work should be the degree to which the children have profited by searching, reading, questioning, conversing, writing, and other activities, in terms of, not only their increased knowledge on the particular subject at hand, but their resourcefulness and fertility of thinking on it, their improved ways of expressing their thoughts about it, the types of questions which they ask concerning it, and the eagerness with which they seek voluntarily additional information on it or attack a new unit of similar nature.

The problems of English instruction which have been selected for discussion are: (1) the lack of interesting units of work offering natural situations for the use of English; (2) the barrier of a multiplicity of courses and objectives; (3) the influence of the textbook in language; and (4) failure to distinguish between the mechanics and content phases of English.

One of the greatest of barriers is the formalizing of composition work, instead

* This is the second of two papers on language teaching in the elementary school. The first, "Who Is Equipped to Evaluate Children's Compositions?" appeared in the March REVIEW.

of providing for writing, speaking, and listening as normal outgrowths of interesting activities. Children, like adults, develop power in the use of English through constant practice in expressing and receiving ideas concerning problems that are gripping to them. It does not make so much difference what the topic is, if the children are keenly interested in it, just so it possesses potentialities for use as an avenue by which the desired English skills may be developed. As early as the fourth grade, at least, children are fascinated by discussions of prehistoric animals, the stratosphere, volcanoes, the habits of animals, the Wild West,¹ and a thousand other topics on which they enjoy centering attention for a considerable period of time, and which offer possibilities for many natural situations calling for all of the fundamental types of English activities.

A multiplicity of courses and objectives acts as a barrier to clear thinking on the part of administrators and teachers in planning an English curriculum. The following terms, relating to various courses or special periods in the elementary school program, have been selected from courses of study, classroom schedules, and educational literature: appreciation, audience reading, composition, conversation, discussion, English, expression, grammar, handwriting, language, language-composition, literature, oral composition, reading, reading-literature, recreatory reading, silent reading, spelling, story-telling, work type reading, writing, written composition.

Lists of objectives for the teaching of English are still longer. The writer once read from a course of study more than four hundred statements intended to express aims and sub-aims in the teaching of

oral and silent reading for the fourth grade only. Pendleton² assembled 1,581 aims in the teaching of English. It is no wonder that many teachers find it difficult to organize materials for the language period. It is quite impossible for them to see the forest for the trees. Lyman states "The objectives of instruction in English are as yet vague, uncertain, and far from agreed upon."³

Curriculum makers would clarify matters for all concerned if they would make clear that there are only four fundamental types of experiences involving English which are the equipment of the best-trained child or adult: (1) *listening* (auditory vocabulary), requiring special training of the ear; the first English vocabulary to be developed by an infant; (2) *speaking* (lingual vocabulary), requiring special training of the vocal apparatus, the second English vocabulary to be developed by the child; (3) *reading* (visual vocabulary), requiring special training of the eye, the first vocabulary to be developed by the school; and (4) *writing*, used in the sense of creative writing for the purpose of communicating one's thoughts in written form (motor-manual vocabulary), requiring, of course, the tools of spelling and handwriting (or typing) which involve special training of the arm and hand.

These four types of activities are interdependent in every grade and all are normal activities for impression or expression in every school subject. English is now being taught, effectively or ineffectively, in all subjects, whether this be recognized or not. The problem is to secure improved teaching procedures in each department so as to offer richer experiences for children in these four fundamental types of activity. It is doubtful if

¹ These topics have been selected from the list of valuable units utilized by Miss Anne C. Feley, Training Instructor in the Training School of the Montana State Normal College, Dillon, Montana. See her articles in *The Normal College Index*, Dillon, for February and November, 1931, and February, 1934.

² Lyman, R. L. *Summary of Investigations Relating to Grammar, Language, and Composition*, p. 6. Supplementary Educational Monographs, No. 36. Chicago: The Department of Education, The University of Chicago, 1929. Pp. VIII+302.

³ *Ibid.*, p. 69.

the goal of better English will ever be reached by regulations penalizing children for errors made in each department. This is too negative a program, lacking the virile qualities of a constructive, motivated one, and over-emphasizes the mechanics of English.

The elementary school textbook in language is a third barrier. It has been an influential factor in determining teaching procedures. The dependence upon the textbook in the language periods is still a prevalent, though very unfortunate, practice. Teachers give various reasons for relying upon the textbook: The school or course of study demands this procedure. The teacher believes that this plan is best. This device is the "easier" plan. The teacher is at a loss to know what to do with the language period without a textbook in the hands of every child. Or the teacher runs away from the expenditure of time, thought, and energy that is required for a richer type of program. The textbook is very influential in determining types of lessons, topics to be discussed, exercises for practice, and, too often, is the sole source of help for teacher and children.

How should the textbook be used? For the children, the textbook should be considered a reference book, to be used often, but only when needed, not a daily guide of language activities. For them, it is of chief use in assisting them in the *mechanics* of all of their oral and written work. Composition, in the sense of creative writing or speaking, cannot be taught from a textbook. In the main, what children discuss, tell, or write about should grow out of their activities in any subject, or what is observed, heard, read, and thought about in the out-of-school hours. One of the tasks of the teacher is to show children how to find potentially interesting topics in the environment. For the teachers, the textbook may contain sample

units of work and suggestive teaching devices. Many teachers need this help.

What should the elementary school textbook in language contain? This is a vexing problem. Since the chief use for the textbook should be to assist children in the mechanics of English, such aids for the children as the eight given in the following list would be appropriate for its content. How many of these devices and exercises can, or should, be included in any one book is a moot question.

1. The simple rules which the children need to know in order to secure accurate mechanics in speaking and writing.
2. Games of various types which are suited to the age of the children for whom the book is intended (for early grades, particularly).
3. Other attractive devices for assisting the memory of rules or for motivating practice periods.
4. Suggestive self-checking lists to be used in reading proof on their own compositions before their products are handed to the teacher.
5. Many practice exercises, humorous and otherwise, which enliven pronunciation and enunciation drills.
6. Inventory tests in various phases of mechanics, to be used at the beginning of the term so that the child may recognize his strong and his weak points, and, at a later period, to measure his progress in those skills.
7. Samples of poor and of acceptable compositions of at least the two general types (factual and literary or fanciful), with reasons for the rating, accompanied by simple explanations of the characteristics to be desired in a composition (oral and written).
8. An index which enables a child to find readily any of the rules, devices, and other aids in the textbook.

Failure to distinguish between the mechanics and the content phases of English is a fourth barrier. In developing skill in the mechanics⁴ of language, one is usually dealing with relatively small facts, offering very little opportunity for variation, which are learned by practicing

⁴ The mechanics of written language include such items as spelling, handwriting, neatness, capitalization, punctuation, indentation, form, margins, heading, and grammatical correctness. The mechanics of oral language include such items as posture, enunciation, pronunciation, pitch and certain other qualities of voice, and some tricks or devices for holding the attention of an audience.

the same thing in the same way every time. Originality, curiosity, vicarious reading, resourcefulness, and fertile thinking have little place in the development of automatic skills, the goal in the mechanics of language. Travel and other rich experiences do not assist the child in learning the multiplication table. To improve the content of what is written or spoken, on the other hand, one needs the very characteristics just mentioned as having no place in developing accuracy of mechanics.

Children will work more effectively if they consider the content and the mechanics of their compositions in separate periods, or in different parts of the same period. A story or poem may, of course, be written in one class period. The length of time it takes is not important, but it is essential that the child be guided by some such order of steps as the four which follow: (1) Select the topic, not necessarily the title, and limit it. (2) Write the rough draft, with attention concentrated on the content. Reading, searching, questioning, to secure additional information, may both precede and follow this step. It is in this step that such a dictionary as the *Thorndike-Century Junior Dictionary*^{*} is of most value, and it should be used freely for meanings and synonyms with a view to securing a better selection of words for the production. (3) Copy the rough draft, to make the mechanics of the final copy as accurate as possible. It is here that each child should have an alphabetical list of words needed for writing, to be referred to whenever he is in doubt about the

spelling of a word. It should be a very much smaller volume than the dictionary and be free from diacritical markings and definitions.⁶ (4) Proof-reading for errors before the composition is handed to the teacher.

Some of the other advantages of distinguishing between the mechanics and thought phases of English are these: (1) A child can more readily discover his strong and weak points. (2) A child who is weak in one of these phases needs a different type of treatment from that given to the child who is weak in the other phase. (3) Separate grades (if grades be given), or at least comments, will help teachers to avoid overweighting one phase. One of the outstanding characteristics of the Pendleton list of aims, to which reference was made in a foregoing paragraph, is the emphasis which teachers place upon the mechanics of composition. (4) Most children are stronger in one phase than in the other. A child appreciates the recognition by the teacher, by a mark or comments, of what he has done well. This provides motive for improvement.

Of all the many problems which face the elementary school in the field of English, one of the outstanding is the need for a survey of English activities *as a whole*, in every department, and a restatement of aims so as to clarify thinking of administrators and teachers on classroom procedures. The textbook, fundamental units of work, and criteria for judging results would necessarily receive attention in such a survey.

^{*} Thorndike, E. L., *The Thorndike-Century Junior Dictionary*. Scott, Foresman, 1935.

⁶ Every spelling textbook should contain, or be accompanied by, an alphabetical list of the words which it contains. Its use in assisting the children in writing would be a good test of the validity of the selection of the words in it.

A Library Center in Action*

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"A loaf of bread, the Walrus said,
Is what we chiefly need;
Pepper and vinegar besides
Are very good indeed . . ."

—LEWIS CARROLL

TO FURNISH much of the necessary daily bread of knowledge as well as the seasoning that adds a tang to the opening of educational oysters must be the aim of the library staff in a school which has for its objective the concentration of the elementary curriculum around library skills and materials. The work of a librarian there has no limits that are not set by time or herself. Combinations of recreational reading with the acquiring of factual data, of individual interests with group assignments, or of curriculum requirements with the available material are innumerable in their possibilities and as varied as are the personalities of the children and teachers to whom these must be adjusted.

Such a situation is found here at Mount Auburn Elementary Training School in Cleveland, which is called a curriculum center for library work. The faculty of the school and the staff of the public library branch maintained here are engaged in an effort to enrich both the subject matter of instruction and the field of enjoyment with the best possible books, and to lead the children to a larger and more intelligent use of reading material through guidance in its selection and in the use of library tools. Every subject in the curriculum is examined for desirable integration with the resources of the library, while

the library's book stock and files of ephemeral material are subjected to constant scrutiny for reënforcement in order to meet the needs of the curriculum.

But to build up an entirely academic course of study and then to turn out from our school a succession of bookworms is no part of the plan. Instead, we are trying to make both the books that are related to each educational activity and other good literature a stimulating force in the child's experience. The amount of headway possible in such a course depends, above all, upon the coöperation between school faculty and library staff, and it is perhaps the day-by-day workings of this interrelation that will give the clearest picture of what is being attempted.

A sixth grade teacher, about to take up the Far East in geography, sent to the library a list of the countries to be studied, in the probable order for consideration. In response, the library had ready, at the proper times, sets consisting of various informational books, mounted pictures, and travel folders for use in the school-room, as well as the jackets for many recreational books about those countries, supplemented with short, typed lists of titles, and sent all of these to the room at intervals that would allow posting at the most favorable time for arousing interest. In the library, a display of fiction, folklore, poetry, and songs of the countries was arranged and placed, with an attrac-

* Prepared under the direction of the Book Evaluation Committee of the Section for Library Work with Children of the American Library Association, Miss Ethel Wright, Chairman.

tive sign, in readiness for the weekly scheduled library period of the class, when they would exchange their books. This display would sometimes have to be removed during the rest of the week to make room for similar ones for other classes, but individual requests in the before-and-after-school times would be referred to the subject-headings in the card-catalog. Sometimes every copy of the advertised titles would be drawn, and so diverse are the stages of maturity in sixth grade, that when China or Japan was in the air, these requests might range from *Chinese Mother Goose Rhymes* to *Young Fu*, or from *The Japanese Twins* to *A Daughter of the Samurai*. That some soaking-in of background occurred in this attack seemed to be evidenced in an increased awareness of the social significance of certain geographical facts discussed in their study, and in frequent questioning in the library as to whether a certain author had really lived in the country he had written about.

When the third grade unit on shepherd life was being approached, the library staff were informed in time for them to comb every source for both factual and creative material. Shepherds in story, poem, song, and painting began to gather in a prominent place in the classroom, while for the teacher's and student-teacher's own reading there arrived, through the public library delivery, *Sheep* by Gilfillan, that delightful and illuminating book of essays about a herder's problems. During the children's library periods, requests began to come for "another copy of *The Eagle's Nest* to take home," for the story of Joseph, for Christina Rossetti's lamb poems, for the *Twenty-third Psalm* in large print, for *Miki*, or for the Petersham's *Christ Child*, "just to look at." Even the newly arrived *Little House on Wheels* reminded them of a herder's wagon, and was borne off in triumph to

the teacher that she might read it aloud to them.

Variations of such introduction to the library phase of new units of work occur with different teachers and different subjects. But however the emphasis is to be secured, one factor remains imperative, and that is the getting together of the teacher and librarian in time for preparation and collection of the material. Postponement of notice until the study is already under way is almost certain to result in disappointment; the wanted books will be out in circulation, or at the bindery, or will not have been advertised in time to catch the interest at its height. Communication between schoolroom and library is attained in various ways: the teacher comes to the library to talk over plans; she sends notes of explanation, or uses responsible children as messengers; the librarian makes occasional hasty tours of the classrooms at recess or after school, gleaning countless bits of news about the book needs arising there; she asks questions in and out of season; and by visiting classes now and then, especially the weekly meetings of the Reading Clubs, she can also gain valuable information about the children's reactions to books, for the reports that they give follow no deadening and rigid form, but may vary from brief comments to a dramatization, and often include spirited arguments over certain comparative merits. The librarian, too, can send notes of inquiry, but a printed form for notifying the library of wanted material, when tried out, seemed to tend toward a stereotyped sort of information and to lack the stimulation of personal conference.

Familiarity with the teacher's objective allows the librarian to go far afield in the search for the right book. The use of source material in history is encouraged now, even in the elementary grades, and so diaries, letters and other records of

contemporaries in some of the periods studied are borrowed from larger libraries when needed. Although the children themselves can read only brief portions of these writings, other significant parts are read and interpreted to them by the teacher, and they do come to grasp the idea of verification and comparison of authorities, often becoming enthusiastic over the discovery of this first step in research. Without the teacher's timely explanation of their intended use, most of these books would have been considered too difficult for inclusion among juvenile references.

While the schoolrooms abound with material drawn from the library for the paving of both the main road and the by-paths of instruction, the library in turn constantly reflects the activities of the schoolrooms. In fact, one week's round there may come close to being a cross-section of what has been going on throughout the school during that time. In the circulating room, the succession of classes comes, half a room at a time, for the weekly period of exchanging books for voluntary home reading, for browsing, for consulting lists, and, when there is time, for hearing a story or a short book-talk. Mingled with these are stray individuals or small groups who have come for emergency book needs or for pleasure reading as a reward for school work well and promptly done. The requests from most of these testify repeatedly to the influence of the teacher in stimulating reading for real enjoyment, often along lines in which she has been establishing a background of knowledge, and the librarian can never have too ready a familiarity with the insides of her book collection if she is to meet and hold these already aroused enthusiasms.

Various groups come and go in the reference room, using encyclopedias, a reserved shelf especially prepared for

their unit of work, or miscellaneous informational books on their subject—ancient Egypt for one group, and, for others, various kinds of homes, colonial schools, constellations, the development of road-building, the colors of Greek vases, plans for an airplane or for a medieval castle. A few children are using the card catalog in preparing a bibliography for their book map of Europe. A pupil waits while one staff member collects all of the stories about Mozart for the music teacher's next period class. Two other children are opening and closing many of the newer books, searching for brightly decorated endpapers to show as samples of what might be attempted in designing a class-record book, and a teacher comes in to ask how many copies of *The Willow Whistle* can be spared for group-reading, to be used in place of conventional school-readers.

A committee of kindergarten infants may arrive, puffed with pride and excitement, to see just how we keep our books separated, as they are planning to arrange a library corner. We discuss the matter with them seriously, and in a few days are shown how they now have one shelf labelled "Animal Stories" and another "Picture Books." First graders, born and bred in congested city areas, and now learning about farm life, come to the library for the settlement of such questions as, "Just how big is a cow?" and "What do they feed the farm animals?" But if the unit is about policemen or firemen, books and pictures are still useful to corroborate and enlarge the evidence of uncles and neighbors, as well as that of trips and visits.

Projects involving the whole school, such as auditorium entertainments, Book Week programs, a kermess, an operetta, or a pet show make of the library a hive of activity, where versions of a story for dramatization are being compared, elu-

sive tunes hunted down, the private affairs of authors investigated, costumes planned, directions for making a rabbit-hutch noted, and a folk-dance even tried out silently in a secluded corner, "to see if this is the right book to take out."

Even with our staff of three persons, a more limited use of the library's resources would result if the pupils were not trained to help themselves in many ways. Constant instruction in the use of library tools is carried on as the need for it arises, and, in the kindergarten and primary grades, is given chiefly by the teachers, who explain and provide situations for the proper care of books, recognition of author and title, familiarity with the alphabet, and finally, the use of a table of contents, with introduction to the index following in fourth or higher-third grade. The librarian teaches the process of drawing and returning books to these primary children. In fourth grade, she begins group instruction, during some of the weekly library periods, with individual problems in the arrangement of books on the shelves, the use of encyclopedias and other reference books, and simple use of the card catalog, spreading this work through fourth, fifth, and sixth grades, while gradually increasing its difficulty. The teachers join in this instruction by doing some encyclopedia work in the schoolrooms, and by providing situations for the use of other reference tools in the library.

One other phase of a librarian's work in a library curriculum center is cooperation with the school faculty in evaluating library objectives and standards for the children, and in determining by experi-

ment and conference at what age-levels these can be most effectively introduced and encouraged. These findings, together with information about books and about methods of school and library integration, are likely to be the subject of questions from teachers elsewhere in the school system, so that the answering of telephone inquiries, the quick compiling of brief book-lists on a given subject, or the explanations of procedure to visitors are all an expected part of the work.

More definite and certain spreading of the habit of utilizing all possible resources of the library in teaching is secured by the eventual absorption into the schools of student-teachers from the School of Education of Western Reserve University, who come here for terms of practice-teaching, and who see and experience, during a formative period, the liberalizing effects of using many enjoyable books for every age and interest. They, too, have periods set aside for them in the library, when they are free to examine and compare many books and to obtain help in selection. It is because of their future influence, as well as in the hope of setting good standards for the children here, that it has seemed wise to eliminate the definitely inferior and much of the mediocre from our book collection, even at the risk of failing occasionally to meet a passing, popular demand. The dross is seldom missed. Instead, attractive good books are so plentiful, and the school undertakings to which they are related are so varied and interesting that the children's problem is often one of finding enough hours in the week to hold them all.

Reading Disabilities and Their Correction*

A Critical Summary of Selective Research

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(Continued from April)

Davis, Georgia, "Procedures Effective in Improving Pupils of Poor Reading Ability in Regular Reading Classes." Independent study, Public Schools, Richmond, Indiana, September, 1929, to May, 1930. *The Elementary School Journal*, January, 1931.

Character of Research: An experimental study of the value of the diagnosis of reading difficulties and of the conduct of remedial reading classes for pupils below standard as measured by the Gates Silent Reading Tests.

Problem: To determine whether or not intermediate grade pupils can be helped to improve reading ability through diagnosis of their reading difficulties and through remedial classes taught on the basis of those difficulties.

Limitations: (1) Pupils from the low fourth to the high sixth grades were included. (2) The Gates Silent Reading Tests were used to select those pupils needing help and to measure the improvement. (3) The pupils included in the study were from every elementary school in the system. (4) Pupils chosen for individual studies numbered 572. (5) Thirteen difficulties in silent reading were encountered by the 572 pupils.

Procedure: All pupils, from the low fourth to the high sixth were given the Gates Silent Reading Test, Types A and C. An attempt was made by means of individual study, to determine why the pupils failed to make the standard. Every child was helped to understand his own difficulties. The reading classes were conducted on the basis of the needs of individuals as shown by the study. Pupils were grouped as far as possible to make for economy of time. During the study, all pupils under consideration were given the National Intelligence Scale A, Form 1. At the end of the experimental period, the pupils were given another form of the Gates Silent Reading Tests.

* Third installment of the Third Annual Research Bulletin of the National Conference on Research in Elementary School English, appearing serially in *THE REVIEW*.

Conclusions: "(1) The use of remedial methods in regular class work (grouping pupils in special remedial classes according to the difficulties encountered) helped the intermediate grade pupils who were studied to become more efficient readers. (2) Although the amount of improvement made by the pupils in the remedial group was large, a considerable number of pupils were not reading up to their mental ability in May, 1930."

Dearborn, Walter F. and Comfort, Forrest D., "Differences in the Size and Shape of Ocular Images as Related to Defects in Reading." A preliminary report of a study being made with the aid of a grant from the Carnegie Corporation in New York, by the Psycho-Educational Clinic of Harvard Graduate School of Education.

Problem: What is the relation of aniseikonia (differences in size and shape of ocular images) and its correction to reading difficulty?

Limitations of Study: (1) This study is limited to a group of individuals who were referred to the Psycho-Educational Clinic because of academic difficulty of some type. The study of a control group is in progress but is not included. (2) Many of the subjects in this study, whose chief difficulty is dyslexia, are suffering from other causes than aniseikonia. (3) Progress in this study is slow because of the long and more or less devious process by which the corrective lenses are made available. This limitation will be removed as the methods of production are simplified. (4) Only a relatively small number of cases have worn the eikonic correction long enough to prove its value. (5) In recording improvement in reading ability following the correction of aniseikonia, it is impossible to tell just how much of the improvement is due to just this or that factor. The correction is usually accompanied by remedial advice and training.

Procedure: Case study records have been obtained for 164 cases of which 117 are, or have been handi-

capped in some special way in school. Most of the latter are cases of dyslexia. A small number have a special defect in spelling. The case record contains the following information: (1) visual condition: heterophoria, ductions, errors of refraction, differences in size and shape of ocular images, stereopsis and symptoms of visual defects; (2) auditory abilities; (3) lateral dominance of eye, hand and foot; (4) educational achievement tests, and diagnostic tests; (5) intelligence tests; (6) case histories (these items of information are frequently supplemented by various detailed tests and examinations too numerous to outline); (7) binocular eye-movement photographs.

Diagnosis of dyslexia is based largely upon the results of educational and intelligence testing, supplemented by case histories. The whole case record is utilized in the study of the cause of the defect.

Remedial treatment consists of various combinations of the following steps. (The treatment is seldom the same for two cases. The variable nature of the individuals treated, the differences in age, achievement, intelligence and other variables make it necessary to have a wide range of remedial technic to be drawn upon.) (1) Help the subject to understand the need for improvement. (2) Develop self-confidence in the subject. (3) Inspire confidence in the remedial program and its administrator. (4) Correct physiological defects when it is possible. This includes the correction of aniseikonia where it is needed. (5) Give instruction in the ways of improving reading. (6) Give frequent encouragement and advice. (7) Administer a definite program of remedial instruction based upon the specific defects of the individual. (8) Supplement or change the program as more information about the patient comes to light.

Records are made of the changes that take place in achievement and other factors.

Specific Findings: (1) Of the clinic cases, 78% had size differences of significant amount; (2) aniseikonia, like heterophoria and ametropia, have a different effect upon different individuals. It is not so much the degree of the defect, as it is the degree of counterpoise of the individual in compensating for the defect, that determines the amount of distress that is caused; (3) five cases of pronounced dyslexia, who had received excellent remedial treatment along the usual lines without showing definite improvement, made striking progress after the correction of aniseikonia; (4) without exception, dyslexia cases whose aniseikonia has been corrected have enjoyed the use of their eyes more and have found the correction of some help in overcoming their difficulty, according to reports from the children, their parents or teachers; (5) due to the present limitations of this study it is not yet possible to draw definite con-

clusions nor to make predictions with regard to the effect of aniseikonia upon reading ability.

Duffy, G. B., "A Diagnostic Study of Reading Difficulties in the Third Grade." Master's Thesis, School of Education, Boston University. Directed by Dr. Donald D. Durrell, 1934. Unpublished. Filed in education library.

Character of the Research: Individual diagnostic studies of reading difficulties found among children in their third year of school.

Problem: To find the differences in the reading development of third grade children and to determine whether certain errors are more common to children of low than to those of average or high intelligence.

Limitations of Study: (1) Eighty-seven pupils in three third grades of Cambridge, Mass., were included in the study. (2) The errors and faulty habits were observed and recorded by a single trained examiner following a standardized procedure. (3) Normality of the grades was determined by the Stanford-Binet mental age distributions.

Procedure: The Stanford revision of the Binet-Simon Tests of Intelligence were given by five trained examiners during February, 1934. The results of the testing were checked and tabulated by the writer.

Conclusions: (1) The following table indicates the percentages above ten of each difficulty found:

	Per cent
Word-by-word reading	25
Inadequate phrasing	34
Strained, high pitched voice	24
Monotonous tone	30
Volume too loud or too soft	24
Poor enunciation of difficult words	16
Ignoring punctuation	49
Habitual repetition of words	25
Errors on small known words	38
Head movements	34
No method of word analysis	21
Immediate recognition low score	30
Analysis by single letter sounds	22
Inaccurate sounding of elements	22
Sounds elements too slowly	32
Unable to synthesize sounds	20
Spells words with inadequate results	17
Guesses at words from partial sounding	14
Guesses at words from word form	38
Will not attempt hard words unless urged ..	12
Word insertion and omission	44
Poor enunciation of prompted words	38

(2) No significant differences were found between the types of errors made by the children in the lowest quartile in intelligence, and by those in the highest quartile. The error profile of the lowest quartile was uniformly higher at all points.

Durrell, Donald Dewitt, "Reading Disability in the Intermediate Grades." Doctor's Dissertation, Graduate School of Education, Harvard University. Directed by Dr. W. F. Dearborn, 1930. Unpublished. Filed in education library.

Character of Research: Survey of the frequency of reading disability among children at the end of their sixth year in school; statistical study of the effect of reading ability on intelligence measures; clinical studies of the psychological skills of non-readers and normal readers.

Problem: To determine the frequency of specific disability in reading among children in the middle grades—sex differences, intelligence quotient differences, and racial differences; to determine the effect of reading ability on group tests of intelligence; to compare the psychological skills of children with reading difficulty with those of normal readers.

Limitations of Study: (1) Tests were made of 1130 children in the Harvard Growth Study. (2) The children were in the towns of Medford, Revere, and Beverly, Massachusetts. (3) The clinical studies were made on twenty-six pairs of children, paired for age, sex, mental age, race, and schooling, but differing in reading ability.

Procedure: The Stanford-Binet tests were given by experienced examiners. Uniformity of administration and scoring was checked by the author. The group tests of intelligence used were the Haggerty Intelligence Examination, Delta II, the Otis Self-Administering Intermediate Examination, and the Dearborn C. Reading ability was determined by the Stanford Achievement Reading Test, Form B, the Chapman-Cook Speed of Reading Test, and the Burgess Silent Reading Test. The criterion of reading difficulty was reading age one or more years below Stanford-Binet mental age. Various psychological tests were included in the clinical studies.

Conclusions: (1) Specific reading difficulty was found among 15% of these children; 3% were reading two or more years below their mental age. (2) Of the boys, 20% were retarded in reading as compared to 10% of the girls. (3) Retarded reading was found to be more frequent among children with normal and superior intelligence than it was among dull children. Six per cent of the children with I.Q.s below 90 were retarded in reading; 16% of those between 90 and 110 I.Q. were retarded; 25% of those above 110 were retarded. The differences between each group were statistically significant. (4) South European children had more reading difficulty than North European among the children with I.Q.s above 90. No differences were found between the children of the two groups whose I.Q.s were below 90. (5) The group test intelligence quotients of children with reading difficulties were significantly below their

Stanford-Binet I.Q.s (Otis, —5.6 I.Q. points, Haggerty, —8.1, Dearborn, —4.6). (6) The group test intelligence quotients of children with superior reading ability were significantly above their Stanford-Binet I.Q.s (Otis, 10.0, Haggerty, 16.8, and Dearborn, 4.5). (7) Various differences were found in the clinical studies.

Durrell, Donald Dewitt, "The Effect of Special Disability in Reading on Performance on the Stanford Revision of the Binet-Simon Tests." Master's Thesis, College of Education, University of Iowa, August, 1927.

Character of Research: Analysis of test results.

Problem: To discover whether a child is handicapped in his performance on the Stanford revision of the Binet-Simon test by the lack of normal progress in reading, and to determine, if possible, whether some types of tests are more affected than others by such a disability.

Procedure: The number of children given complete examination by the Iowa Mobile Mental Hygiene Clinic was 1017. Of them 134, or 13%, were found to have specific disability in reading.

Each of the children included in this study was given the complete Stanford Revision of the Binet-Simon test as well as the individual reading examination developed by Miss Marion Monroe. The individual reading examination contains Gray's Oral Reading Examination, Detroit Word Recognition Test; Haggerty Sigma 1 Test 2, Monroe Silent Reading Test and a laboratory word test standardized by Miss Monroe and many other tests as well as an analysis of errors in oral reading. In order to distinguish specific disability in reading from a horizontal disability in all subjects, each child was given the Stanford Achievement Arithmetic Examination and oral and written tests from Ayer's Spelling Scale.

Every child in the reading disability group was paired off against another child of approximately equal chronological age, obtained mental age and intelligence quotient. Members of control group were diagnosed as having no special reading handicap but were referred for poor school work.

Specific Findings and Conclusions: (1) Although their obtained mental ages appeared to be equal to those of the control group, children with a reading disability are definitely handicapped in certain tests of the Stanford-Binet, their obtained mental age from such a scale being lower than their actual mental level. (2) Tests which involve reading are not a fair measure of the intelligence of children with a special reading handicap. (3) Tests involving the definitions of words appear to be harder for the reading disability group. (4) Children with a special reading disability usually establish lower basal ages on the

Stanford-Binet than do children without this difficulty. They also tend to show a wider range of test scatter. These differences are not great enough to be diagnostic. (5) Re-scoring of the Stanford-Binet test by an abbreviated form which omits some tests which are unfair for children with a reading disability shows an average raise of over four points I.Q. of children with special reading disability and no significant raise in I.Q. of the group without it.

Eames, Thomas H., "A Comparison of the Ocular Characteristics of Unselected and Reading Disability Groups." Independent study directed by the author, 1931. *Journal of Educational Research*, Vol. XXV, March, 1932.

Character of research: A statistical study based on examination of the eyes of children with and without disabilities in reading.

Limitations of the study: (1) The children in the reading disability group were of approximately the same ages as those of the unselected group. (2) The 143 unselected cases were collected from various public schools; of these, 56 were obtained from the Belmont, Massachusetts, school department. (3) The reading disability group was composed of 114 cases, most of which were seen in private practice and the balance at the Harvard Psycho-Educational Clinic. All eye examinations were made by the author.

Procedure: The eye examinations included visual acuity of each eye, refraction, coordination of the eyes in distant vision, coordination of the eyes at the reading distance, and duction. The data are presented in two tables, the first of which deals with visual acuity and coordination; the second with refraction.

Findings: The principal fact brought out by this study is that the eyes are more exophoric at the reading distance among reading disability cases.

Implications: Theoretically, when the patient is fatigued, the image seen by one eye may shift laterally over the image seen by the other eye to the extent of 3 letters for every prism diopter of exophoria at the reading distance.

Conclusions: Exophoria is important in reading disability and treatment for it should be instituted.

Eames, Thomas H., "Improvement in Reading Following the Correction of the Eye Defects of Non-readers." An independent study directed by the author, 1933. *American Journal of Ophthalmology*, Vol. XVII, No. 4, April, 1934.

Character of Research: A comparison of the reading increments of a group of reading disability cases which had received correction of eye defects, and an unselected group.

Problem: To determine what improvement in

reading may be expected to follow the correction of eye defects in reading disability cases.

Limitations of Study: Of 114 cases of reading disability, only 28 had been tested with the same test at comparable intervals. Of these, 20 had been tested by the same school psychologist. The reading test employed was the Gates Primary Reading Test. The unselected group was composed of children of equal age, all of whom had been tested with the same test, at the same interval, and by the school psychologist who had tested 20 of the poor readers. The unselected group contained the same number of cases as the reading disability group.

Procedure: The reading test was administered in the early weeks of school in the fall of 1932. This was immediately followed by complete eye examination of the reading disability cases. The examination was made by the author who prescribed for all eye defects found in this group. The children in both groups were tested again just before the close of school, the same test being used. Meanwhile, the reading disability cases had been returned to their schools and had received only such additional help as their teachers had seen fit to give them. The data are presented in a table.

Findings: Over a period of seven consecutive months the unselected group presented a median increment in reading age of 5.33 months. The reading disability group with correction of eye defects showed a median increment of 7.80 months of reading age.

Conclusions: Correction of eye difficulties is important in the treatment of reading disability cases.

Eames, Thomas H., "Low Fusion Convergence as a Factor in Reading Disability." Independent study directed by the author, 1933. *The American Journal of Ophthalmology*, Vol. XVII, No. 8, August, 1934.

Character of Research: A comparison of unselected and reading disability groups as to amplitude of fusion convergence for different sizes of type.

Problem: To determine whether or not fusional dysfunction is an important factor in reading disability.

Limitations of Study: (1) Eighty-eight reading disability cases were compared with 52 unselected cases taken at random from grades 2, 3, and 4. (2) Unselected cases were obtained through the cooperation of the Belmont, Massachusetts, School Department. (3) Reading disability cases were taken from the author's private practice.

Procedure: Fusion convergence was tested and measured by the Wells method in the routine manner. A new set of divided word charts was prepared for each of three sizes of type and fusion convergence.

Findings: (1) The median amplitude of fusion convergence is lower among reading disability cases than among unselected cases. This applies for each size of type used. (2) The reading-disability group shows a greater percentage of cases below the level of the median of the unselected group in all three sizes of type used in the study. (3) The smaller the type, the lower the amplitude of fusion convergence in both groups, but the percentage of reading disability cases falling below the level of the median of the unselected group increases as the size of the letters diminishes.

Conclusions: The amplitude of fusion convergence is an important factor in reading disability.

Eurich, Alvin C., "The Growth of Reading Ability as Measured by Photographic Eye-Movement Records." Unpublished. Independent study, 1932-34.

Problem: To measure with photographic eye-movement records the growth of reading ability of elementary school children during a two-year period.

Procedure: During the spring of 1932, the photographic eye-movement records on the reading of three paragraphs were secured for slightly more than one hundred pupils in grades 4A, 5B, and 5A of the Tuttle School in Minneapolis. In the spring of 1934 an effort was made to secure similar records while these pupils read the same paragraphs. Complete records were obtained for approximately one-half of the total group. The results were analyzed for gains and for the relationships between the two sets of records. The number of fixations, the number of regressions, the total perception time, and the comprehension score were each considered separately in the analysis.

Results: For the three paragraphs combined, the median number of regressions was reduced from 44 to 24 over the two year period; the median number of fixations from 210 to 195; the median perception time from 57.6 seconds to 34.7 seconds, while the median comprehension score increased. The coefficients of correlation expressing the relationship between the two sets of records are as follows: total perception time, $r = .55$; total number of regressions, $r = .66$.

Conclusions: (1) Normally the eye-movements of elementary school pupils obtained in reading improve progressively. The lack of improvement for a given pupil reveals a definite reading deficiency. (2) For the group as a whole, a marked positive relationship exists between the photographic eye-movement records at the beginning and end of a two-year period.

Fendrick, Paul, "A Study of the Visual Characteristics of Poor Readers." Doctor's Dissertation, Co-

lumbia University. Sponsored by Professor A. I. Gates. Will probably be published in *Contributions to Education* in 1935.

Character of Research: Experimental study to measure the visual attributes of poor readers.

Problem: A comparative analysis of visual characteristics between two groups of elementary school pupils matched for age, sex, schooling and intelligence, but definitely dichomaic with respect to reading ability.

Limitations of study: (1) Population was procured from four New York City schools. (2) Sixty-four matched pairs were studied.

Procedure: A comprehensive battery of ocular tests was given to poor readers selected from second and third grades of four New York schools. The visual measurements included: optometrical tests made in the Columbia University Laboratory of Physical Optics; standard tests of visual acuity, eyedness and muscle imbalance; Betts' Ready to Read Tests; tests of visual perception in the Gates Reading Series; and other adaptations specially developed for this investigation.

Cases were matched from pupils in the same school in which the good excelled the poor readers by at least one year in reading ability on a standardized test. These children were also measured for their ocular condition. Categorical comparisons were then effected to note the differences between the poor and control readers.

Auditory and speech characteristics of this group were studied by G. L. Bond.

Conclusions: (1) Poor readers in schools where the look-and-say method of teaching was predominant, were characterized by a relatively lower degree of visual acuity for near distant measurements. (2) No statistically significant differences were found that suggested lateral muscle imbalance as a factor in reading disability. (3) Optometrical examinations on 40 paired cases taught by the look-and-say method revealed 50% of the poor readers as having normal vision, and 75% of the good readers as having normal vision. (4) Significant differences that favored the good readers on various tests of visual perception were also found. (5) No reliable differences in eyedness or handedness were obtained.

Gates, Arthur I. and Bennett, Chester C., *Reversal Tendencies in Reading. Causes, Diagnosis, Prevention and Correction.* Bureau of Publications, Teachers College, Columbia University, 1933.

Problem: Discussion of the various current theories with regard to reversal tendencies in reading. Orton's theory is very carefully analyzed. Studies by Haefner and Marion Monroe are also scrutinized. The publication also includes a study made by the co-

authors of the publication. A brief analysis of the study is made below.

Procedure: Three hundred and fifty pupils, Grades 2B and 4A, were extensively examined with reading and related tests during the year. A group of pupils showing the most pronounced tendency to make reversal errors were matched with a group similar except that they showed the least tendency to make errors of this type.

Conclusions: The above study did not show any indication of a tie-up between reversal errors and mixed hand-eye dominance, or reversal errors and left handedness-left eyedness. The authors suggest the following as the most important causes of reversal tendencies: (1) transfer to reading of eye-motor habits acquired in observing objects before beginning reading; (2) prolonged study of words due to heavy vocabulary burden or to visual defects or to various inappropriate teacher techniques in beginning reading.

Gates, Arthur I., "The Psychology of Reading and Spelling." *Contributions to Education*, No. 129, Bureau of Publications, Teachers College, Columbia University, 1922.

Purpose: The description of the method of diagnostic procedure and the main results of its use on a number of cases, together with such suggestions concerning specific remedial treatment and general methods of instruction as were developed during the course of the work.

Limitations: (1) A number of cases were taken from grades 3 to 8, Scarborough School, Scarborough, N.Y. These pupils' difficulties in reading and spelling or both had been unsolved problems for years. Other cases were secured in the city or vicinity of New York. (2) There were 105 completed individual examinations.

Procedure: The 105 cases were put through a series of tests, including an intelligence test, tests of reading ability, spelling ability, arithmetic ability and handwriting ability. The educational picture of each case was thus derived. The cases were then given tests of various reactions to visual stimuli, reactions to spoken words, tests of sensory and motor mechanisms and reactions. The test results were then put through a statistical treatment.

Conclusions: Differences were probably due to one or more of the following causes: (1) unfavorable training and environmental influences, (2) unfavorable behavior of a general character, (3) defects of the sensory mechanisms, (4) defects of the motor mechanisms, and (5) defects of the connecting mechanisms.

Gates, Arthur I., "A Study of the Role of Visual Perception, Intelligence, and Certain Associative Processes in Reading and Spelling." *Journal of*

Educational Psychology, Vol. XVII, No. 7, September, 1926.

Problem: An attempt to disentangle and appraise the mechanisms and functions upon which good reading or spelling depends.

Limitations: (1) Three hundred and ten school children, grades 1 to 6; (2) correlation method of analysis; (3) series of tests designed to measure certain mental functions or capacities such as perception and association.

Procedure: A series of tests designed to measure visual perception, associative learning (auditory-visual, visual-visual), general linguistic and abstract learning, reading ability, and spelling ability were given to the 310 school children and the results were analyzed by the method of correlation.

Conclusions: Of the several abilities studied, that termed "word-perception" is most closely associated with achievement in reading and spelling; intelligence yields the next highest correlation whereas tests of perception of geometrical figures of different sorts and digits, of associative learning of visual and auditory symbols, or of visual and visual symbols show but slight association with these school abilities. Further investigations of the nature of word-perception and its relation to reading and spelling achievement are likely to be most fruitful.

Gates, Arthur I. and Boeker, Eloise, "A Study of Initial Stages in Reading by Pre-School Children." *Teachers College Record*, Vol. XXIV, No. 5, November 1923.

Problem: An analysis of the means by which inexperienced children learn words, and of some of the factors involved, such as the length of the word, the type of configuration, similarities in the initial, middle, or final portions which may influence the difficulty in learning.

Limitations: (1) Children varied in age from 5-5 to 6-1 with a mean age of 5-9. (2) Tests conducted during May and June, 1923.

Procedure: The children were handled individually. A satisfactory method of presenting words in association with subjects to determine the optimum number of words for a lesson, the rate of presentation, the type of test, and the number of lessons consistent with maximum attention was worked out and carried through. For material, the names of concrete objects, common to the children's oral usage, were selected.

Conclusions: Other things being equal, the longer words are harder to learn. The names of objects that adults would judge to be of greatest interest to children do not appear to be consistently easier to learn. Children appear to learn words frequently by observing some minute detail, such as the dot over an *i*, or the tail of a *y*. Children improve very rapidly in

ability to learn words with practice. They learn on the average 175% as many words during the fifth day as on the first.

Gray, William S., "The Diagnostic Study of an Individual Case in Reading." *Elementary School Journal*, April 1921.

Character of Research: Clinical study of the nature and correction of the reading difficulties of a fourth-grade boy.

Problem: To determine through detailed laboratory study the nature of the reading deficiencies of a fourth-grade boy, who was failing because of inability to read, to identify their causes if possible, and to determine appropriate corrective and remedial procedures.

Limitations of the study: As an early diagnostic study, it was subject to the following limitations: (1) A limited number of diagnostic tests and procedures were available. (2) The remedial procedures employed were selected largely on a trial and error basis. (3) The relative merits of the remedial procedures used were not determined through comparison with other methods.

Procedure: A detailed study was first made of the personal and school history of the case to determine his background and the general character of his deficiencies. The laboratory diagnosis included a study of his general intelligence, a detailed study of his achievements and needs in reading, a careful study of the nature and causes of specific weaknesses in reading such as inability to recognize individual words, and the photographing of the subject's eye-movements in reading.

Conclusions: The five outstanding defects revealed by the diagnosis were: (1) inappropriate motor habits in making the return sweep of the eyes from the end of one line to the beginning of the next; (2) irregular progression of attention from left to right; (3) failure or inability to scrutinize words in sufficient detail to recognize significant parts; (4) inability to analyze new words; and (5) inability to recognize words in thought units. Methods used to overcome each of these deficiencies proved effective. The results showed clearly the value of intensive diagnostic and remedial studies.

Gray, William S., with the co-operation of **Delia Kibbe**, **Laura Lucas**, and **Laurence W. Miller**, "Remedial Cases in Reading; Their Diagnosis and Treatment." *Supplementary Educational Monographs*, No. 22. Department of Education, University of Chicago, 1922.

Character of Research: Clinical study of the cases and correction or removal of the difficulties of poor readers.

Problem: To determine through detailed diagnosis the nature and causes of the difficulty of poor readers,

to classify them according to types, and to determine experimentally the methods of correcting or removing the difficulties.

Limitations of the Study: Owing to the fact that this was one of the early diagnostic studies reported, it was subject to the following limitations: (1) Only a limited number of diagnostic tests were available. (2) The significance of the findings was not as clearly understood as it is today. (3) Few corrective and remedial measures had been developed for overcoming specific deficiencies and difficulties. (4) The number of cases studied was too small to justify more than tentative conclusions.

Procedure: The study of individual cases included the following steps: (1) A study of the child's personal and school history was made at the beginning to secure facts which might aid in determining the specific difficulties which he encountered. (2) A preliminary diagnosis was made of the child's reading achievements and needs through the use of informal tests and laboratory techniques. Before the specific nature of a child's difficulties was determined, it frequently became necessary to observe his classroom work, to secure information from his teachers concerning his reading errors and difficulties, to compare him with a good reader in order to determine significant differences, and to make use of the child's own introspections and comments. (4) On the basis of all the evidence secured, tentative conclusions were reached concerning the nature of the pupil's difficulties and then probable causes. (5) A corrective or remedial program was then organized and administered. (6) Measurements of the progress of the pupil were made from time to time throughout the experimental period to determine the effectiveness of the training provided and to identify additional difficulties. (7) As the work progressed modifications were made in the remedial program in order to provide for new difficulties that were discovered and to adapt the training to the changing needs of the pupil. (8) A final study was made of the achievement of the pupil using either the same or different forms of the tests that were used in the preliminary diagnosis.

Conclusions: The value of diagnosis and remedial training was clearly demonstrated. Specific types of deficiencies were usually associated with given causes. Although reading difficulties, as a rule, present unique characteristics, they can be readily classified into a few major types.

Hegge, Thorleif G., "Special Reading Disability With Particular Reference to the Mentally Deficient." Subjects from the Wayne County Training School, Northville, Michigan. *Proceedings of The American Association for the Study of Mental Deficiency*, 1934.

Character of Research: (1) A summary of the work done on reading problems at the Wayne Coun-

ty Training School. (2) An experimental study of the results of remedial training in reading.

Problem: To study the effects of remedial treatment in reading upon progress in reading and in general academic subjects.

Limitations of Study: (1) Subjects limited to high-grade mentally deficient children. (2) Further research is necessary.

Procedure: One group of 14 high-grade mentally deficient children with reading disabilities (average C.A. 13-4; I.Q. 71; reading grade 1.6) was given individual treatment in reading, the number of 30-minute lessons ranging from 116 to 401, and averaging 263. Another group of 13 similar reading cases (average C.A. 13-6; I.Q. 76; reading grade 2.3) was trained for five months, with an average of 61 lessons. At the end of training the progress of each group in reading and in general academic work was compared with that of one hundred unselected cases.

Conclusions: (1) The average progress in reading of the first group was 2.6 grades—the rate of progress being over three times that of the unselected cases. Even the poorest case progressed 1.7 times as fast as the unselected group. The general classroom progress was over twice that of the latter. (2) The second group with only five months' training, advanced in general academic work four times faster than the unselected group and twice as fast as normal public school children. Moreover, the rate of further progress, after special training was discontinued, was still ahead of that of both institutional and public school children.

Implications: Our results suggest that retardation in reading blocks general educational progress, and that its removal permits the general progress to approach the limits set by the M.A. In light of the above, it might be profitable to postpone all academic work with high-grade mental defectives until an accumulation of mental maturity is assured. The interval might be used for other beneficial activities.

Hildreth, G. H., "Reversals in Reading and Writing." *Journal of Educational Psychology*, January 1934.

Problem: To determine the extent and character of reversal errors in children of three different types of schools and several grade levels.

Procedure: Two sets of tests were given in primary grade classes in a private school, a public school, and a Hebrew parochial school. The test materials consisted of three types: word pronunciation in column lists, four oral reading paragraphs, and a perception-copying test. Every type of error made during oral reading was recorded at the time of the test. Tabulations were made of all reversal errors in all tests both for individuals and groups.

Results: The number of reversal errors was small

compared with the total number of errors; 44 reversal errors were made by 220 children in the reading tests. The reversal tendency declined from lower to higher grades. This decline is typical in the three types of schools. Reversal errors were generally distributed among the pupils in each class. Lack of consistency was found in reversal errors made by individuals on the different types of tests. Only one child made reversal errors in all three types of tests. Private school children made more reversal errors than public school children. Right-handed and left-handed children made practically the same number of reversal errors: right-handed, 1.67 per child; left-handed, 1.85 per child. Within the public school population brighter children made fewer reversal errors than duller pupils. Of the children who made two or more reversal errors, the average I.Q. was 94, whereas the I.Q. of the entire public school population examined was 102. The more serious reading deficiency cases made reversal errors in grades two and three but not in grade four. Children in the Hebrew school made no more reversal errors than children in other schools, though they learn to read and write Hebrew script from the first grade. Reversal errors were more frequent in the less practiced, less familiar material.

Hincks, Elizabeth M., "Disability in Reading and Its Relation to Personality." Doctor's Dissertation, Harvard University, Department of Psychology. Supervised by Professor Walter F. Dearborn. *Studies in Educational Psychology and Educational Measurement*, edited by Walter F. Dearborn, Harvard University Press, 1926.

Problem: Do we find that sensory and motor defects, or defects of perception and memory accompany reading disability? Do accompanying disturbances of personality observed cause the difficulty or result from it? What relation do they bear to the reading disability?

Limitations: Eleven subjects, children selected for extreme reading disability. Age range, 6-15 years; school grade range from first through ninth grade. All subjects except one had average or superior general intelligence. Two subjects from public schools, nine from private schools. Six boys and five girls. Observations extended over two years.

Procedures: Diagnostic case studies covering social adjustment, personality, and family background. Familiar traces of reading difficulty. Psychological examination covered general intelligence, visual perception and visual learning, auditory and motor perception and learning. Qualitative study of the individual subject's reading process by standardized and informal tests of reading and spelling. Attitudes toward reading in the child and family. Remedial teaching. Ingenuity required in finding reading material of interest to the child. Building up

a reading vocabulary by Grace Fernald's kinaesthetic method, typewriting, flash cards, the tachistoscope. Learning phonetic sounds. Necessity for varying the task because of high fatigability and brief span of attention and effort.

Conclusions and Findings: With one exception subjects showed deviations of visual and auditory perceptual learning processes generally accepted to be of primary importance in reading, but each in a different way. Possibility of limited field of vision. In auditory field eight subjects had defective discrimination of musical pitch. Frequent difficulty of hearing phonetic sounds, especially vowels. Inability to rhyme. High frequency of left handedness, 33% of our subjects left handed, whereas according to estimate of W. Franklin Jones, 4% of the population at large are left handed. Hereditary factor: nine cases had other cases of reading and spelling difficulty in the family. Behavior difficulties and maladjustment of personality found in varying degrees in all cases. These are probably caused by reading defect, or other factors in the child's life. The child's attitude of fundamental importance, sometimes retarding or preventing his learning to read, but other causes were found for the initial difficulty.

Keller, Helen Bass, "Remedial Work on Disability in Word Recognition." Independent study conducted at the University of California at Los Angeles and Division of Psychology and Educational Research, Los Angeles City Schools, 1926-1934. Unpublished.

Character of Research: Summary of results obtained by special remedial procedures in public school remedial reading classes.

Problem: To evaluate certain practices for overcoming difficulties in word recognition.

Limitations of Study: (1) No control groups were available. (2) Subjects were enrolled in five remedial reading rooms in Los Angeles City Schools. (3) Only growth in word recognition included in this study. (4) Mental age, chronological age, race, etc., not differentiated. (5) Work done by teachers specially trained. (6) Individual instruction carried on major part of the time. (7) Length of time enrolled in rooms not regarded in study.

Procedure: After a few weeks' preliminary writing period during which a special procedure was taught, subjects were required to write all words not readily recognized. Daily individual records of all words not recognized by subjects in the course of oral reading, were made. These words were subsequently checked for recognition at intervals during the term and again at the close of the semester. All phonetic drills, analysis of words, etc., were eliminated.

Conclusions: (1) Words acquired by 384 subjects through writing averaged 88% of those previously not recognized. (2) Older children having repeatedly failed to acquire sight vocabularies by other methods, made marked progress. (3) Method was equally effective regardless of age or intelligence within the limits specified. (4) Procedure lends itself to group as well as individual instruction.

Kirk, S. A., "The Influence of Manual Tracing on the Learning of Simple Words in the Case of Subnormal Boys." Subjects from the Psychological Laboratory, University of Chicago, and the Illinois Institute for Juvenile Research. *The Journal of Educational Psychology*, Vol. XXIV, October 1933, pp. 525-535.

Character of Research: An experimental comparison of two teaching methods.

Problem: To compare the relative efficacy of the manual tracing (kinaesthetic) method with the conventional "sight" method.

Limitations: Only 6 subjects were used.

Procedures: The subjects were 6 non-readers (boys) ranging in C.A. from 9-1 to 11-3 and in I.Q. from 63 to 80. The materials to be learned were 150 commonly known, three-letter words. These words were presented to the subjects at the rate of five words per day over a period of 30 days. Each subject learned a list of five words by the manual tracing method (hearing, saying and tracing the words) on one day, and by the "sight" method (hearing and saying the words) on alternate days. Twenty-four hours after learning, the subjects were tested for retention by "first recall" and relearning. A comparison was made of the efficacy of each method for the individual subjects and for the group.

Conclusions: (1) In terms of trials to learn there was practically no difference between the two methods. (2) In terms of both "first recall" and the "savings" score, retention was greater in every case when the manual tracing method was used. (3) In terms of both measures of retention for the group as a whole, the manual tracing method was significantly superior to the "sight" method.

Ladd, Margaret Rhoads, "The Relation of Social, Economic and Personal Characteristics to Reading Ability." Doctor's Dissertation, Teachers College, Columbia University. Dr. A. I. Gates, Sponsor. *Contributions to Education*, No. 582, Bureau of Publications, Teachers College, Columbia University, 1933.

Problem: What general relationships are found among the results of tests of silent reading, intelligence, socio-economic and foreign language background, play interest, etc., and how do good and

poor readers compare in socio-economic background, play interests.

Limitations: (1) Grades 3-B, 4-A, 4-B, and 5-A of public schools of New York City. (2) Total of 161 boys and 154 girls. (3) No negro children; subjects 43.5% Jewish. (4) Nearly all children born in United States.

Procedure: The reading tests and intelligence tests were given in the standard way. All other tests and questions were read aloud to the children, each of whom had his test paper before him, and each marked on his paper the answers, item by item, as they were read by the examiner.

Conclusions: No marked relationships were found between reading ability and gross scores on socio-economic status of the home, play interests, and general personality adjustments.

Luckiesh, M. and Moss, Frank K., "Size of Pupil as a Possible Index of Ocular Fatigue." Lighting Research Laboratory, General Electric Company, Nela Park, Cleveland. *American Journal of Ophthalmology*, Vol. XVI, 1933, page 393.

Character of Research: A statistical analysis of measurements of the pupillary aperture.

Problem: To determine what changes, if any, occurred in the pupillary area as a result of close visual work.

Limitations of Study: (1) Investigation involved nine adult subjects. (2) No control was possible over the amount of visual work performed between test-periods.

Procedure: The problem was investigated by measuring the size of the pupils of nine subjects at the beginning and close of a day of clerical work. The measurements were made with a new form of pupillometer designed by the authors and described in the *Journal of the Optical Society of America*, Vol. XXII, 1932, page 735. All measurements were made with the eyes adapted to the same brightness-level and with a constant state of accommodation. The research involved 1920 separate measurements of pupillary diameter.

Conclusions: (1) The results indicate that the pupil dilated 13% in area during the course of the day. This change is approximately six times as great as the probable error of the data. (2) On occasions when the subjects volunteered the information that their eyes "felt tired" there was a marked increase in the pupillary area for the afternoon period as compared with that of the morning. (3) The data also indicate that the pupillary area gradually and somewhat irregularly increases as the week progresses from Monday to the close of the work-week on Friday. Therefore, it appears that the effect of a day's use of the eyes for close visual work is not entirely dissipated by relaxation at night.

Luckiesh, M. and Moss, Frank K., "A Correlation between Illumination Intensity and Nervous Muscular Tension Resulting from Visual Effort." Lighting Research Laboratory, General Electric Company, Nela Park, Cleveland. *Journal of Experimental Psychology*, Vol. XVI, 1933, p. 540.

Character of Research: A behavioristic investigation of reflex effects of seeing.

Problem: To determine the relationship between the development of nervous muscular tension and the intensity of illumination while reading.

Limitations to Study: (1) Subjects normal from a psychologic and pathologic standpoint; adults only. (2) Intensity of the illumination was the only systematic variable.

Procedure: The development of tenseness while reading was quantitatively appraised by recording the pressure unknowingly exerted upon the knob of a key by the fingers of the left hand which rested naturally upon the device. The intensity of the illumination upon the book to be read was varied from 1 to 100 foot candles. The research involved a total of 308 thirty-minute periods of reading under intensities of 1, 10, and 100 foot candles, respectively. Fourteen subjects, eight men and six women, were employed.

Conclusions: (1) That the psychophysiological reactions resulting from reading under different intensities of illumination are of such definiteness and magnitude that they are capable of creating muscular strains which are readily measurable. The data show that the average pressure exerted upon the key decreases from 63 to 43 grams as the intensity of illumination upon the book increased from 1 to 100 foot candles, respectively. The relative probable errors of data are considerably less than 1%. (2) That an intensity of illumination of at least 100 foot candles is desirable for reading black print on white paper by adults of normal vision.

MacCallum, Helen C., "A Study of the Mental Reactions and Traits of Superior and Retarded Readers." Master's Thesis, School of Education, University of Michigan. Directed by Dr. Clifford Woody, 1933. Unpublished. Filed in education library.

Character of Research: An intensive analysis and evaluation of a number of test results, an interview blank, and a study-habit questionnaire.

Problem: To make a thorough study of the responses and reactions of a group of superior readers and a group of retarded readers in the eighth grade.

Limitations of Study: (1) Only eighth-grade pupils of one school system participated. (2) Only 34 pupils were included in the study.

Procedure: The Sangren-Woody Reading Test

was given to the eighth-grade class. The 17 pupils ranking lowest, called Group I, and the 17 pupils ranking highest, called Group II, were selected as subjects. Both groups were under careful consideration for a period of 18 weeks. The first six weeks were devoted to an intensive study of health status, sociological background, school records, and reading history, while the last twelve weeks were devoted to a series of tests which included a battery of diagnostic tests and reading tests both of a formal and informal nature. The daily English period of 55 minutes was given over entirely to this testing program which partook of the nature of a recitation in English, especially those periods which were given to the informal tests. The Sangren-Woody Reading Test was given in October, January, and May. From the data of all of these materials a comparative study was made of the two groups and conclusions drawn. Some very illuminating case studies were also made and pertinent conclusions drawn therefrom.

Specific Findings: The results from the study-habit questionnaire show that Group I exceeded Group II in ignoring unknown words, in whispering unknown words where the thought was not clear, in the difficulty of concentration, and in skimming and skipping certain parts. Group II exceeded Group I in trying to figure out word pronunciations and meanings, in the number of methods of attacking unknown words, in the effective use of the dictionary in pronunciation, in looking up key words, in promptness at beginning work, in the organization of materials read, in re-reading their lessons, in thoroughness and in desirable emotional responses. Group II had over three times as many words as Group I on the special Thorndike vocabulary, nearly four times as many words on the Terman list, and three times as many on the word building test. The median chronological age of Group I exceeded the median chronological age of Group II by 11 months. There was a difference of approximately five years in the grade-level achievement of the two groups on the Sangren-Woody Reading Test.

Mitzelfeld, Lucy L., "A Diagnosis of Difficulties in Reading in the Sixth Grade." Master's Thesis, College of Education, University of Michigan. Directed by Dr. Clifford Woody, 1932. Published in part. Filed in education library.

Character of Research: A study of two reading groups, one of 15 pupils with reading difficulties and the other of 15 pupils without such difficulties.

Problem: To determine the specific causes which are responsible for poor reading and to determine the particular strength in various skills and habits which contribute to effective reading.

Limitations of Study: (1) Two groups of sixth

grade pupils, 30 in all, were used in the study. (2) The data were secured in the Maybury School, Detroit, Michigan. (3) A mental test and a series of reading tests, some of which were standardized and some informal, were given to the two groups. (4) An interview blank was used to compile information on the health status, sociological background, and attitude of the pupils.

Procedure: The Alpha A Intelligence Test was given to determine the probable learning capacity of the pupils. The Detroit Reading Test and the Detroit Vocabulary Test were the standardized tests which were used. To determine further the extent of their vocabulary the Terman Vocabulary Test was given. Informal tests for the fourth through the ninth grades were constructed. The purpose of these tests was to detect special types of difficulties and to ascertain possible levels of attainment. A word substitution test, a different meaning test, and an imagery test were also administered to the two groups. To try to find out just what the pupils did when they read, a study habit questionnaire was used. This questionnaire consisted of four parts, dealing with the following aspects of reading: (1) pronouncing unknown words, (2) finding the meanings of unknown words, (3) behavior in the work type reading, and (4) behavior in the recreational type reading.

Conclusions: (1) In general, pupils with reading difficulties have a lower mental rating than pupils without such difficulties. (2) Age did not appear to be a factor conditioning reading achievements. (3) Pupils with difficulties are able to read material one to three grades below grade-level but not at their grade-level. Pupils without difficulties are able to read material above their grade-level and also material usually classified as adult reading. (4) In general, pupils with reading difficulties might be said to be lacking in experience and pupils without difficulties appear to have had many and varied experiences. (5) Pupils with reading difficulties seem to lack a sense of coherence and associative powers. Pupils without difficulties are very adept at associating ideas. (6) In general, pupils with reading difficulties have poor habits of study. Their lack of understanding and discrimination leads to a continuation of practices which are valueless and wasteful. Pupils without difficulties appear to know what to do and how to do it. Their study is purposeful and objective. (7) Pupils with difficulties have few methods of attacking unknown words. Their knowledge of the use of the dictionary is slight. Pupils without difficulties show power in accurate reasoning and are not at loss as to how to proceed when difficulties of different types arise. (8) In general, pupils with difficulties do not really like to read, while superior readers read for the joy and pleasure that they derive.

(To be continued)

Editorial

Needed: Social Guardians

CRIME commissions are reporting that over half the line-up at many police stations these days consists of boys and girls in their teens. There can be no doubt that there has been, in the past two decades, a breakdown of disciplinary and controlling influences in the lives of growing children. Take a single example. Fifteen years ago it was not uncommon for parents to guide the reading of their children, even to keep the funnies from them. The possibility of doing so was at least not beyond reasonable effort. But, within four or five years, the invasion of the home by the comics and other journalistic perversions had set in in real earnest, and since then the children have grown more and more undisciplined in their tastes.

I heard a young father, in the fall of 1924, tell of an unsuccessful attempt to keep the funnies, the comic supplement of the Sunday newspaper, away from his son and daughter of elementary school age. He succeeded in excluding the comics from his home, but news of the journalistic blockade spread up and down the street and in a short time the children living there were supplying, surreptitiously, the forbidden Sunday supplements to their "unfortunate" little neighbors.

At that time, four pages of the colored supplement were a maximum for Sunday, with a complete rest from the Yellow Kids, the Happy Hooligans, and the Katzenjammers during the week. But today, the tastes of children have been indulged to such an extent that the characters of the funnies have stepped out of the papers, and are everywhere. Tarzan and Tarzan regalia have become ubiquitous. Little boys decline to wash their hands and faces

unless lathered with Pop Eye soap, and fail to get to school on time unless prompted by Micky Mouse watches. This may seem winsome and whimsical enough, but when regarded in its true light, as grotesque pampering, it has a serious aspect.

Even the most superficial analysis shows that strong influences are constantly at work to weaken or offset the effects of schooling in the lives of children. A few decades ago, the home and the school mutually strengthened each other as educational forces. In the home, life abounded in physical chores, with occasional opportunity for vigorous recreation. In the school, mental training was largely a matter of rigorous discipline with but slight occasion for invigorating pastimes.

The changes that have taken place have not only weakened the home influences in their relationship to education, but have established them as direct opposites when left unorganized and undirected. The modern home seems to be peculiarly helpless in the control of the wayward impulses of growing children, and estranged from the school. The very psychological principles as expounded by Dewey, upon which the schools found their pedagogy, contribute to this helplessness of parental authority, for expert knowledge is required in the application of modern psychology to the needs of growing children.

There can be no doubt of the waning of family discipline today. The fact is pretty well established that as soon as the schools relax their hold on upgrowing boys and girls, little remains to safeguard the weaker individuals who are crowding in increasing numbers, the prisons and reformatories.

Shop Talk

VOCABULARY FOR AMOS AND ANDY

IN A CORNER of a fifth grade room in Berwick, Pennsylvania, where the Bloomsburg State Teachers College does some of its teacher training, a board bears this legend:

Vocabulary for Amos and Andy

1. conclusions
2. predicament
3. subpoena, etc.

No word may be placed on the list until the children can spell and pronounce it correctly and tell exactly what Amos and Andy mean when they try to use it.

It has proved one of the most inviting vocabulary exercises we have tried, and seems more desirable than turning off the radio to prevent the "Amos and Andy pronunciation," as some parents I know have felt called upon to do.

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SCHOOL RELIEF

BETTER TIMES are apparent in many phases of American life, but the fickle goddess has not yet smiled on the schools, according to a news release from the Office of Education, April 1. "More than one eighth of the school children of the United States are in school districts without sufficient funds to operate schools the customary school term. . . . In 467 school districts in eight states there were no available funds to operate schools this year. In these districts there are 57,090 pupils and 1,745 teachers. . . . City or independent schools without sufficient funds for normal terms total approximately 4,700."

Teachers' salaries continue to be very low, in some cases, below that allowed unskilled labor. The Relief Administration advanced approximately \$14,500,000 for the payment of teachers' salaries last year, but this did not prove wholly satisfactory. Relief Administrator Harry L. Hopkins declares that if the Fed-

eral Government is going to keep the schools open, it should set up a special program for this purpose. What is needed is "school-relief."

PUBLISHERS FOR FIFTY YEARS

THE CONSIDERABLE part played in American education by publishers of textbooks is brought to mind by the observance, this year, of the fiftieth anniversary of Silver, Burdett and Company.

The company, organized in 1885 by Mr. Edgar O. Silver, published the pioneer eight-book series of literary readers—*Stepping-Stones to Literature*. Early publications of the company included the Todd and Powell *Normal Course in Reading*, which embodied the alphabet phonetic method, and *The Ward Readers*, which used the phonetic method. More recent Silver, Burdett reading series have been *The Progressive Road to Reading*, *The Pathway to Reading*, and the *Unit-Activity Reading Series*, just published.

SUMMER MEETINGS

OXFORD, ENGLAND, and Denver, Colorado, are lodestones to the traveler always, and with the added pull of educational meetings to be held this summer, they must certainly set many teachers to packing bags and consulting schedules.

The World Federation of Education Associations will meet in Oxford. Information about sailing schedules and tours of England and the continent may be obtained by writing the World Federation of Education Associations, 1201 16th Street, N.W., Washington, D.C.

The summer meeting of the National Education Association in Denver, referred to in press-notices as "the great 1935 round-up," will offer such diversions as two continental divides, mile-high lakes, Pikes Peak, and a variety of sports. Secure information concerning a Colorado trip from railroads, motor clubs, or the N.E.A. offices in Washington.

CONTENT OF LANGUAGE TEXTBOOKS

(Continued from page 122)

level. No statement is made here with the intention of including all textbooks within the meaning of a generalization. The reader may draw his own conclusions by judging the fairness of the sampling taken.

Among all the objectives set up by the fourteen books whose objectives were classified and tabulated, only nine were found to be listed by at least two books,

and none was listed in any way by more than twelve. Only one was listed by twelve. For all practical purposes, then, there seems to be almost no agreement among authors of these elementary language textbooks in regard to what content materials should be taught, where they should be presented, or in regard to the objectives whose furtherance is sought by the lessons presented.

VOCABULARY ACQUISITION

(Continued from page 119)

would be secured of the whole list, we would find that in May, 1934, the children tested had a median comprehension of 633 words and a median usage of 567 words.

A new list of 700 words is being pre-

pared and tests constructed for checking it. This list will be tested for three years and the results reported. It is our belief that it is possible to teach a much larger vocabulary than is ordinarily assumed, if specific techniques are employed.

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